Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
KNAUF EARTHWOOL GLASSWOOL INSULATION WITH ECOSE TECHNOLOGY

SYNONYMS
Earthwool glasswool thermal insulation, Earthwool glasswool sound control insulation, SupaFil cavity wall insulation, Jet Stream MAX insulation.

PRODUCT USE
Faced and unfaced segment and blanket insulation.

SUPPLIER
Company: Knauf Insulation Pty Ltd
Address:
Unit 2, 44 Borthwick Avenue
Murarrie
QLD 4172
Australia
Telephone: +61 7 3393 7300
Fax: +61 7 3902 0613

Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to NOHSC Criteria, and ADG Code.

RISK
•None under normal operating conditions.

SAFETY

Safety Codes	Safety Phrases
S24	• Avoid contact with skin.
S39	• Wear eye/ face protection.
S51	• Use only in well ventilated areas.
S09	• Keep container in a well ventilated place.
S26	• In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
glasswool, soluble, amorphous	65997-17-3.	>85
binder resin proprietary non- hazardous		<15
de-dusting mineral oil, solvent refined, non- hazardous		<2

Data for glass fibres only.
Facing compositions not addressed.

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Section 4 - FIRST AID MEASURES

SWALLOWED
• Immediately give a glass of water.
• First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

EYE
■ If this product comes in contact with the eyes:
• Wash out immediately with fresh running water.
• Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
• Seek medical attention without delay; if pain persists or recurs seek medical attention.
• Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN
• Gently brush or vacuum off adherent fibres.
• Wash affected areas thoroughly with water (and soap if available).
• Seek medical attention if irritation exists and persists.

INHALED
• If dust is inhaled, remove from contaminated area.
• Encourage patient to blow nose to ensure clear breathing passages.
• Ask patient to rinse mouth with water but to not drink water.
• Seek immediate medical attention.

NOTES TO PHYSICIAN
■ Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
• There is no restriction on the type of extinguisher which may be used.

FIRE FIGHTING
• Alert Fire Brigade and tell them location and nature of hazard.
• Wear breathing apparatus plus protective gloves for fire only.
• Prevent, by any means available, spillage from entering drains or water course.
Use fire fighting procedures suitable for surrounding area.

FIRE/EXPLOSION HAZARD
• Non combustible.
• Not considered to be a significant fire risk. However, it will break down under fire conditions and the binder may burn and produce toxic fumes of carbon monoxide (CO) and carbon dioxide (CO2).
• Containers/packaging may burn.

FIRE INCOMPATIBILITY
■ None known.

HAZCHEM
None

Personal Protective Equipment
Gloves, boots (chemical resistant).

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Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS
• Clean up waste regularly and abnormal spills immediately.
• Avoid breathing dust and contact with skin and eyes.
• Wear protective clothing, gloves, safety glasses and dust respirator.
• Use dry clean up procedures and avoid generating dust.
• Vacuum up or sweep up. NOTE: Vacuum cleaner must be fitted with an exhaust micro filter (HEPA type) (consider explosion-proof machines designed to be grounded during storage and use).
• Dampen with water to prevent dusting before sweeping.
• Place in suitable containers for disposal.

MAJOR SPILLS
• Clear area of personnel and move upwind.
• Alert Fire Brigade and tell them location and nature of hazard.
• Control personal contact by using protective equipment and dust respirator.
• Prevent spillage from entering drains, sewers or water courses.
• Avoid generating dust.
• Sweep, shovel up. Recover product wherever possible.
• Put residues in labelled plastic bags or other containers for disposal.
• If contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING
• Limit all unnecessary personal contact.
• Wear protective clothing when risk of exposure occurs.
• Use in a well-ventilated area.
• Avoid contact with incompatible materials.
• When handling, DO NOT eat, drink or smoke.
• Keep containers securely sealed when not in use.
• Avoid physical damage to containers.
• Always wash hands with soap and water after handling.
• Work clothes should be laundered separately.
• Use good occupational work practice.
• Observe manufacturer's storing and handling recommendations.
• Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

SUITABLE CONTAINER
• Polyethylene or polypropylene container.
• Packing as recommended by manufacturer.
• Check all containers are clearly labelled and free from leaks.

STORAGE INCOMPATIBILITY
• Avoid storage and reaction with hydrofluoric or phosphoric acids and concentrated alkalis.

STORAGE REQUIREMENTS
• Keep dry.
• Store under cover.
• Protect containers against physical damage.
• Observe manufacturer's storing and handling recommendations.

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA mg/m³	TWA F/CC	Notes
Australia Exposure Standards	glasswool, soluble, amorphous (Synthetic mineral fibres (SMF))	0.5	0.5	(see Chapter 14)

MATERIAL DATA

KNAUF EARTHWOOL GLASSWOOL INSULATION WITH ECOSE TECHNOLOGY:

- None assigned. Refer to individual constituents.

GLASSWOOL, SOLUBLE, AMORPHOUS:

- for biosoluble fibres and dusts

ES TWA: 0.5 fibre/ml (for respirable fibres); 2.0 mg/m3 (inspirable dusts)

Biosoluble vitreous fibres do not generally have separate Occupational Exposures Standards (OELs). But for airborne respirable particles and inspirable dusts different exposure standards are suggested.
It is anticipated that airborne respiratory fibre levels will rarely exceed 0.5 f/ml in user applications. During most applications and during installation of the material, no special ventilation is required but where working in dusty atmospheres local ventilation must be considered. In operations involving continuous manufacturing the need for ventilation must be evaluated and where high fibre levels are anticipated local exhaust with emission capture facilities must be introduced.

Ensure that the release of, and exposure to fibres and/ or dust is minimised. Use hand tools that generate the least amount of dust or fibres; power tools, used directly on the product, require dust collection systems. Clean work areas regularly by vacuuming or wet sweeping.
The concentration of dust, for application of respirable dust limits, is to be determined from the fraction that penetrates a separator whose size collection efficiency is described by a cumulative log-normal function with a median aerodynamic diameter of 4.0 µm (+-) 0.3 µm and with a geometric standard deviation of 1.5 µm (+-) 0.1 µm, i.e..generally less than 5 µm.
Synthetic vitreous fibres are composed largely of aluminium and calcium silicates derived from rock, clay, slag or glass. For the purpose of classification they are divided into two broad classes: filaments and wools. Filaments contain continuous glass filaments, while wools contain glasswool, rock (stone) wool, slag wool, refractory ceramic fibres and other newly engineered biosoluble fibres. Generally wool fibres tend to be shorted and finer than continuous filament fibres and their diameters more variable.
All fibrous glass products consist of silicon and aluminium oxides. The final properties of the glass are dictated by the percent composition of other oxides including alkali metal oxides (e.g. Na2O, K2O), alkaline earth oxides (e.g. CaO, MgO) and metal oxides (e.g. ZrO2 Fe2O3). The term" mineral wool" is used to describe rock wool and slag wool and occasionally glasswool. Refractory ceramic fibres (RCFs) are a specialised type of synthetic vitreous fibre that are highly heat resistant and contain a much higher concentration of alumina (Al2O3) than other fibres. Although RCFs are amorphous at low temperatures, they undergo partial crystallisation (devitrification) to quartz, cristobolite, or tridymite at the elevated temperatures for which they were designed.
The diameter of airborne fibres are an important physical property from a biological standpoint because thin fibres are considered respirable and may be deposited in the peripheral lung airway. Airborne fibres with diameters < 3 µm are generally considered respirable in humans. There is a strong correlation between fibre diameter and airborne fibre levels found in the work place. Generally the smaller the fibre diameter, the lower the airborne fibre concentration. Rock wool and slag wool typically possess fibre diameters in the range of about 3-7 µm. Glasswool possesses fibre diameters typically of 3-15 µm. The smaller diameters of these fibres in comparison to continuous filament fibres allows for the possibility that a small fraction of these fibres may become respirable when they become airborne. Special purpose glass fibres typically have fibre diameters of <3 µm and often < 1 µm. RCFs typically have fibre diameters of 1-5 um
Exposure standards for man-made vitreous (silicate) fibres (also known as MMMF, SMF or MMVF) are currently based on a combination of chemical and physical properties.

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In general they fall into one of two groups:
Those with random orientation with alkaline oxide and alkaline earth oxide (Na2O+K2O +CaO+MgO+BaO) content:
• greater than 18% by weight (generally the mineral wools)
• less than 18% weight: this group (Refractory Ceramic Fibres (RCF) and special purpose fibres).
Members of both groups may produce cancer but certain fibre properties must be considered before assigning this classification These are described in Notes Q, and R of Annex 1 of the European Directive 67/548/EEC.
Note Q - this applies to the first group (the mineral wools) only:
The classification as a carcinogen need not apply if it can be shown that the substance fulfils one of the following conditions:
• a short term biopersistence test by inhalation has shown that the fibres longer than 20 µm have a weighted half-life less than 10 days (the so-called biosoluble fibres) , or
• a short term biopersistence test by intratracheal instillation has shown that the fibres longer than 20 µm have a weighted half-life less than 40 days (biosoluble fibres), or
• an appropriate intra-peritoneal test has shown no evidence of excess carcinogenicity, or
• absence of relevant pathogenicity or neoplastic changes in a suitable long term inhalation test.

Note R- this applies to both groups (the mineral wools and RCFs)
The classification as a carcinogen need not apply to fibres with a length weighted geometric mean diameter less two standard geometric errors greater than 6 µm.

The ACGIH has created exposure standards for each group:
For mineral wools (glasswool, rock wool and slag wool) a TWA of 1 f/cc pertains
For RCFs (and special purpose fibres) a TWA of 0.2 f/cc pertains

Biosoluble fibres(described in Note Q) have not yet been assigned a value - because they may create irritation, however, a" Nuisance Particulate" value cannot apply. Although not actually soluble in water the term dissolution is often used to describe the durability of synthetic vitreous fibres, especially as it pertains to biological fluid. Dissolution produces degradation. Under alkaline and acidic conditions, the silicate network of synthetic vitreous fibres can be attacked, resulting in leaching of individual ions and the eventual disruption of the entire fibre network.

PERSONAL PROTECTION

EYE
• Safety glasses with side shields.
• Chemical goggles.
• Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

HANDS/FEET
• Wear chemical protective gloves, eg. PVC.
• Wear safety footwear or safety gumboots, eg. Rubber.

OTHER
• Personnel involved in the installation of unbonded ceramic materials should wear disposable coveralls, or long-sleeve loose fitting clothing, gloves and suitable respirator. Such equipment should also be used by personnel employed in removing materials which have not become embrittled.
• Personnel involved in the removal of embrittled material should in addition, use a full-face cartridge respirator, or full-face powered air purifying respirator, each with suitable particulate filter, or a full-face pressure demand airline respirator.
• Disposable coveralls or long sleeve, loose fitting protective clothing, e.g. overalls (launder clothing separately from other clothing).

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- When working above head height, use head covering.
- Minimise dust generation by using sharp hand cutting tools if possible.
- Powered tools (e.g. saws etc.) should only be used if fitted with dust extraction and containment equipment.
- Vacuum cleaners should be available for fibre/dust removal.

RESPIRATOR
- Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory . These may be government mandated or vendor recommended.
- Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- Use approved positive flow mask if significant quantities of dust becomes airborne.
- Try to avoid creating dust conditions.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required. For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

ENGINEERING CONTROLS
- Provide good ventilation (either forced or natural)
- Where possible, enclose sources of dust and provide dust extraction at the source.
- Restrict access to work areas involved in handling man-made mineral fibres and ensure that adequate training, in the handling of such materials, has been provided.
- Use operating procedures which limit the generation of dusts.
- When working with unbonded fibres, local exhaust ventilation is generally a requirement.
- Exhaust ventilation should be designed to prevent accumulation and recirculation of dusts and to remove dusts from the workplace.
- Keep the work place clean. Use a vacuum cleaner fitted with a HEPA filter; avoid using brooms and compressed air.
- Where possible use products specially tailored to the application; some products can be delivered, ready for use, without further cutting or machining. Some can be treated or packaged to minimise or avoid dust emission during handling.
- When removing embrittled materials, the removal area should be contained to minimise the transfer of dust to other work areas and should include an intermediate changing and cleaning area. Local exhaust ventilation should be provided.
- If measured respirable fibre is less than the recommended occupational exposure level, wear approved dust respirator Class P1 (half-face).
- Use a Class P2 or P3 respirator (full-face), where exposure is above the recommended occupational exposure level
- Use an approved respirator if power tools without dust extraction or containment are used.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE
A matt of brown fibrous material resembling wool. Supplied in different shapes and sizes and packaged in plastic. It is flexible. Facings such as kraft paper or aluminium foil laminates are applied to meet specific purposes.
The fibrous material is bound together by a resin together with a light de-dusting oil coating.

PHYSICAL PROPERTIES
Does not mix with water.

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State	Manufactured	Molecular Weight	Not applicable.
Melting Range (℃)	>704	Viscosity	Not Applicable
Boiling Range (℃)	Not applicable.	Solubility in water (g/L)	Immiscible
Flash Point (℃)	Not applicable	pH (1% solution)	Not applicable
Decomposition Temp (℃)	>300 binder etc.	pH (as supplied)	Not applicable
Autoignition Temp (℃)	Not available	Vapour Pressure (kPa)	Not applicable.
Upper Explosive Limit (%)	Not applicable	Specific Gravity (water=1)	Not applicable
Lower Explosive Limit (%)	Not applicable	Relative Vapour Density (air=1)	Not applicable
Volatile Component (%vol)	<1	Evaporation Rate	Not applicable

Section 10 - STABILITY AND REACTIVITY

CONDITIONS CONTRIBUTING TO INSTABILITY
■ Product is considered stable and hazardous polymerisation will not occur.
For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED
■ Not normally a hazard due to the physical form of product. The material is a physical irritant to the gastro-intestinal tract.

EYE
■ Not normally a hazard due to physical form of product.
The dust may produce eye discomfort and abrasive eye inflammation.

SKIN
■ Not normally a hazard due to physical form of product.
All man-made mineral fibres, in common with their natural counterparts, may produce mild irritation and inflammation which results in itching or, in the case of certain sensitive individuals, a slight reddening of the skin. This is due to entirely to a mechanical reaction to the sharp, broken fibre ends and does not involve chemical or allergic effects. Itching and possible inflammation are mechanical reactions to coarse fibres greater than 5 micron in diameter. These symptoms occur particularly in folds of skin around wrists, collars and waistbands. Perspiration aggravates the condition. Irritation is accentuated by fibre adhering to sweaty skin at elevated temperatures. Symptoms generally abate within a short time after exposure ceases. When products are handled continually, the skin itching often diminishes.
The material is mildly abrasive and may produce discomfort which results in a temporary skin rash. Discomfort is accentuated by fibre adhering to sweaty skin at higher temperatures.

INHALED
■ There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.
Loose and granular forms produce more dust than preforms (segments) but handling of segments results in fibre dislodgement and dusting. Nose and throat irritation may be transitory. Material may be dampened with a dedusting oil to mitigate problems.
There is little evidence for acute toxicity after inhalation of mineral fibres. Rockwool/ glasswool administered by inhalation produce little fibrosis in experimental animals [IARC Monograph 43].
The dust may produce upper respiratory tract discomfort. Nose and throat discomfort may be transitory.
Cutting and trimming may result in fibre dislodgement and dust production.
Nose and throat irritation may be transitory. Handling of segments results in fibre dislodgement. If correct

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handling procedures are not followed, dusting fibre dislodgement may occur. Material is dampened with a dedusting oil to mitigate problems.

CHRONIC HEALTH EFFECTS
■ Insulation wools belong to the generic group of man-made vitreous fibres (MMVF), also known as man-made mineral fibres (MMMF) or synthetic mineral fibres (SMF). The insulation wools are significantly different from other types of MMVF. The size and chemical properties of the fibres are different. Insulation wools have a high oxide content, which makes them more soluble than most other MMVFs in the bodily fluids of the lung. This reduces their length of persistence in the lung and their potential to cause cancer.
The length of time which a fibre stays within tissue is a main indictor of the potential of the fibre to cause damage. This length is dependent upon solubility, leaching and clearance. Large fibres generally persist longer than small ones (glass fibres, though longer, are cleared more quickly).

TOXICITY AND IRRITATION
EARTHWOOL GLASSWOOL INSULATION WITH ECOSE TECHNOLOGY:
■ Not available. Refer to individual constituents.

GLASSWOOL, SOLUBLE, AMORPHOUS:
■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

■ Insulation wools belong to the generic group of man-made vitreous fibres (MMVF) also known as man-made mineral fibres (MMMF) or synthetic mineral fibres (SMF). The insulation wools are significantly different from other types of MMVF such as refractory ceramic fibres, reinforcement fibres and glass microfibres used for special applications.

Insulation wools are different not only in the dimensions of their fibres but also in their chemical composition and their biopersistence. Specifically, insulation wools are defined within the European Union and elsewhere as being man-made vitreous (silicate) fibres with random orientation and with the Na2O+K2O+CaO+MgO+BaO content exceeding 18% by weight.
The sum of percentages of the weights of oxides in the fibre (KI) has been shown to be the best predictor of in-vitro solubility at pH 7.4. Fibres with a KI of 40 or more are highly soluble and are unlikely to pose a carcinogenic risk.

For glasswool reducing the alumina content of fibres and increasing boron has been found to significantly increase in-vitro solubility at pH 7.4 whilst at pH 4.5 the dissolution rate is very low at low alumina contents. For rock (stone) wool composites , biosolubility is created when the alumina content is increased to 17-18% and silicon oxide content is reduced to below 42-43% - alternately alumina may be decreased to below 3-4% and phosphate content increased.

Biosoluble insulation wools dissolve more readily in physiological fluids in the lung than most other MMVFs and thus do not persist in the lung. They have a low biopersistence.
The length of time which a fibre type stays within tissue is a principal indicator of the pathogenic effect of the fibre. The biopersistence of the substance is the net effect of dissolution, leaching and clearance. Large fibres generally persist in tissue longer than small fibres but glass fibres are probably exceptional as longer glass fibres are cleared more quickly. Regulation around the world nevertheless place limits on the half-life of fibres longer than 20 um following short-term inhalation and intratracheal instillation.
The lack of inhalation risk of biosoluble fibres contrasts with the known effects on the lung and pleura of more durable fibres.

EEC directive 97/69/EC exonerates these materials from any carcinogenic classification. [
Rats have been exposed 6 hours per day, 5 days per week during 2 years at an average concentration of 200 fibres per mL (200 to 300 times higher than concentrations found in manufacturing plants).
Preliminary findings are: No formation of fibrous tissue.
No significant elevated tumour incidence over the negative control group.
Reversible cellular changes are evident: these are similar to the effects observed after inhalation of inert dust. [Manufacturer]

Studies in inorganic fibre toxicology demonstrates that fibre biopersistence and in vitro dissolution rate correlate well with fibre pathogenicity. Test fibres for one such study included eight synthetic vitreous

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fibres (SVFs), refractory ceramic fibre (RCF1), four fibre glasses (FGs), rock wool, slag wool, HT stone wool- and two asbestos types (crocidolite and amosite). Fibre toxicology and biopersistence were investigated using rodents exposed by inhalation. To evaluate chronic inhalation toxicity, rodents were exposed nose-only to 100 fibres > 20 mum in length (F > 20 mum)/cm3, 6 h/day, 5 days/wk, for 2 yr (rats) or 1 1/2yr (hamsters). To evaluate lung biopersistence, rats were exposed nose-only for 5 days to fibre aerosol; lung burdens were then analysed during 1 yr postexposure. In vitro dissolution rate was evaluated in a flow-through system using physiological solutions that mimic the inorganic components of extra- and intracellular lung fluids. The 10 test fibres encompassed a range of respiratory toxicities, from transient inflammation only to carcinogenesis. Lung clearance weighted half-times (WT1/2) for F > 20 mum were 6-15 days for stonewool, building insulation fibre glasses, and slag wool; 50-80 days for rock wool, 2 special-application FGs, and RCF1; and > 400 days for asbestos. WT1/2 correlated with pathogenicity: The rapidly clearing fibres were innocuous (insulation fibre glasses, slag wool, and stonewool), but the more biopersistent fibres were fibrogenic (rock wool) or fibrogenic and carcinogenic (special-application fibre glasses, RCF1, amosite and crocidolite asbestos).

In vitro dissolution rates (kdis = ng/cm2/h) of the 10 fibers at pH 7.4 or 4.5 ranged from < 1 to > 600. Fibres that dissolved rapidly in vitro also cleared quickly from the lung and induced only transient inflammation in the chronic studies. In contrast, fibres that dissolved slowly in vitro were biopersistent in the lung and tended to induce permanent pathogenicity. Other in vitro studies of fiber degradation suggest that, in addition to fiber dissolution, fiber leaching and subsequent transverse breakage may also be important mechanisms in lung biopersistence and hence pathogenicity. The validity of using lung biopersistence for predicting the potential pathogenicity of synthetic vitreous fibres (SVFs) is confirmed by this research. The research also supports the use of in vitro fibre degradation at pH 7.4 and/or pH 4.5 as an indicator of SVF potential pathogenicity. [Hesterberg T.W., Hart G.A: Inhalation Toxicology 12, Supplement to Issue 10, October 2000, pp 91-97]

In another study the pathology resulting after long- term tests (inhalation and injection into the abdominal cavity) in rats of a new biosoluble type was investigated. The biosoluble fibre type was characterised by a relatively high content of aluminum and a relatively low content of silica compared to the traditional stone wool. This biosoluble fibre had a high in-vitro dissolution rate at pH 4.5 and a relatively low dissolution rate at pH 7.4. In a short-term inhalation study this biosoluble fibre was considerably less biopersistent (more biosoluble) than stone wool and other MMVFs. In contrast, to the biosoluble fibre, stone wool caused pulmonary fibrosis in long- term inhalation studies. For both fibre types the incidence of tumors was comparable to the control groups. Also in injection studies the importance of the high biosolubility of fibres was confirmed, because stone wool caused a significant increase of mesotheliomas in the abdominal cavity while the biosoluble-fibre exposed rats did not show any mesotheliomas.

Section 12 - ECOLOGICAL INFORMATION

GLASSWOOL, SOLUBLE, AMORPHOUS:
■ Synthetic vitreous fibers are nonvolatile and generally insoluble, so their natural tendency is to settle out of air and water, and deposit in soil or sediment. Synthetic vitreous fibers are not known to undergo any significant transformation or degradation in air, sediment or soil,or water.
The silicate network of all synthetic vitreous fibers can be attacked by acids or alkaline solutions, but this does not occur to any significant extent under environmentally relevant conditions.
Using in vitro tests at 37°C with simulated extracellular fluid (pH 7.4), the dissolution rates of glass, rock, and slag wools with diameters of 1 um were reported as 0.4, 1.2, and 2.0 years, respectively.Lifetimes for refractory ceramic fibers were about 5 years. Because of their larger surface area, fine fibers will undergo dissolution more readily than course fibers

Binder-coated mineral wools are hydrophobic, therefore, no adverse environmental effects would be expected if this product was accidentally released in the water or soil. No harm to fish or wildlife would be caused by coated mineral wools.
Bio-soluble wools are expected to solubilise over a period of weeks to months in most ecosystems .
DO NOT discharge into sewer or waterways.

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Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
Earthwool glasswool insulation with ECOSE Technology	No Data Available	No Data Available		
glasswool, soluble, amorphous	No Data Available	No Data Available		

Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Authority for disposal.
- Bury or incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM:
None (ADG7)

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: ADG7, UN, IATA, IMDG

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE None

REGULATIONS

Regulations for ingredients

glasswool, soluble, amorphous (CAS: 65997-17-3) is found on the following regulatory lists;
"Australia Inventory of Chemical Substances (AICS)","OECD Representative List of High Production Volume (HPV) Chemicals"

No data for Knauf Earthwool glasswool insulation with ECOSE Technology (CW: 4699-19)

Section 16 - OTHER INFORMATION

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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Issue Date: 1-July-2014

This is the end of the MSDS.